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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,946	04/24/2001	Daniel J. Thuringer	00CR097/KE	5618
7590	03/16/2005		EXAMINER	
Rockwell Collins, Inc. Attention: Kyle Eppele M/S 124-323 400 Collins Rd. NE Cedar Rapids, IA 52498			DEPPE, BETSY LEE	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/840,946	THURINGER, DANIEL J.
	<b>Examiner</b>	<b>Art Unit</b>
	Betsy L. Deppe	2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14, 17, 18 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-9 is/are allowed.
- 6) Claim(s) 10-14, 17, 18 and 20-23 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on April 24, 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                         |                                                                             |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.                                               |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                         | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

1. This Office Action is in response to the amendment filed October 7, 2004.

***Drawings***

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s):

a. The figures do not show the cycle slip detector as recited in claim 8. The recited positive and negative comparators comprise the "cycle slip occurrence detector" which corresponds to "slip detector 330" in Figure 3. However, Figure 3 does not show a "cycle slip direction detector" (i.e. "327" in Figure 3) communicating with "slip detector 330." Although the slip detector 330 may be

implemented by a positive comparator and a negative comparator (see [0038]), the figures do not show using these comparators with the slip direction detector. Furthermore, since the detailed description does not describe using the comparators in slip detector 330 with the slip direction detector 327, it is unclear whether the outputs of the comparators comprising slip detector 330 would be identical to the outputs of positive comparator 323 and negative comparator 324 given that the input to slip detector 330 differs from the input to comparators 323 and 324.

b. Figure 3 does not show the size estimator ("338") communicating with the cycle slip direction detector ("327") as recited in claim 9, lines 21-22. If Figure 3 is amended to be consistent with claim 9, the detailed description must also be amended to describe the communication between the size estimator and the cycle slip direction detector. (See the objection to the specification below) The Examiner suggests deleting "and with said cycle slip direction detector" in claim 9, lines 21-22 to overcome this objection.

No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the detailed description does not describe the size estimator ("338" in Figure 3) communicating with the cycle slip direction detector ("327" in Figure 3) as recited in claim 9, lines 21-22. The Examiner suggests deleting "and with said cycle slip direction detector" in claim 9, lines 21-22 to overcome this objection.

### ***Claim Objections***

5. Claims 12 and 13 are objected to because of the following informalities: in claim 12, line 8 and claim 13, line 9, "a cycle" should be "the cycle." Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 10-14, 17, 18 and 20-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. With regard to claims 10-14, 17, 18 and claim 22, in claim 10, lines 14-22 and claim 22, lines 8-16, it is unclear when a positive and negative cycle slip output is generated. For example, claim 10, lines 14-15 and claim 22, lines 8-9 recite one condition under which the positive cycle slip output is generated whereas claim 10, lines 18-20 and claim 22, lines 12-14 recites a different condition upon which the positive cycle slip output is generated. It is unclear whether one or both conditions must be met in order for generation of a positive cycle slip output. As dependent claims of claim 10, claims 11-14, 17 and 18 are rejected under the same ground.

9. With regard to claims 12 and 13, it is unclear which of the three detecting steps in claim 10 is referred to by "said detecting step" on lines 1-2.

10. With regard to claims 20-23, "compensating . . . before said detecting step" in claim 20, lines 8-9 is confusing. If the compensating step occurs before the detecting step, the claim should be rewritten so that the compensating step precedes the detecting step and "before the detecting step" in the compensating step should be deleted. If the compensating step is recited before the detecting step, "filtered phase

difference" in claim 20, lines 5 and 6 should be "compensated filtered phase difference."

As dependent claims of claim 20, claims 21-23 are rejected under the same ground.

***Allowable Subject Matter***

11. Claims 1-9 are allowed.
12. Claims 10-14, 17, 18 and 20-23 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
13. The following is a statement of reasons for the indication of allowable subject matter: with regard to claims 1-9 and 20-23, prior art of record does not teach or suggests in combination a cycle slip detector or detection method comprised of compensating a magnitude of a filtered phase difference based on a predetermined compensation response and then using the compensated signal to detect cycle slip.

***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Wednesday and Thursday (8:30-4:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272 - 2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Betsy L. Deppe  
Primary Examiner  
Art Unit 2637